Comparing coefficients

Do now:

$A = \pi r^2$	$abc = cba$	$b^2 + 2b - 7 = 0$
$S = D \div T$	$6a \div 2 = 3a$	$x^2 + x^2 = 2x^2$
$3y = 2y + 10$	$3x + 9 = 30$	

Identity	Equation	Formula

Identity –

Equation –

Formula –

2.

$(m^3)^4 = m^{12}$	$F = ma$	$(2x - 4)(3x + 8) = 24$
$a^5 \times a^4 = a^9$	$3x + 6y = 20$	$w^7 = 7$
$x^{\frac{1}{2}} = \sqrt{x}$	$A = \frac{1}{2}(t + b) \times h$	

3.

$10x^3 + 5x = 5x(2x^2 + 1)$	$A = \frac{1}{2}ab \sin C$	$a = \sin A \times b \div \sin B$
$\sin x = x$	$a^2 = b^2 + c^2 - 2bc \cos A$	$9x^2 - 16 = (3x + 4)(3x - 4)$
$\sqrt{x + 1} = x^3$	$\sin x \div \cos x = \tan x$	

Worked example	You try
$3(x + 5) \equiv ax + b$	$2(3x - a) \equiv bx - 8$
$5x + 14 + ax - b \equiv 7x + 9$	$2(2x + 3) + 3(5x + 2) \equiv ax + b$
$(x + 3)(x + 5) \equiv x^2 + ax + b$	$(x + a)(x - 5) \equiv x^2 + bx - 15$

k)

$2x^2 + 8x - 5 \equiv a(x + b)^2 + c$

l)

$2x^2 + ax - 1 \equiv b(x + 3)^2 + c$

Task – calculate the unknown values a, b and c

$(ax + 1)(x + c) + b \equiv 5x^2 + 11x + 8$	$3(ax + 1) - (6x + b) \equiv 21x - 8$

$(ax + 5)(x - b) + 4x \equiv 2x^2 + cx - 10$

$4(3x + a) + 5(ax + b) \equiv 22x + 28$

$4x^2 + ax + 3 \equiv b(x + 1)^2 + c$

$\dfrac{ax^2 + x - b}{x + 2} \equiv x - 1$

$2(5x + 1)(3x + b) + ax(2x + 3) \equiv 44x^2 + 37x + c$

$$\left(e - 2\sqrt{3}\right)^2 = f - 20\sqrt{3}$$

where e and f are integers.

Find the value of e and the value of f

Given the identity below, find the value of s and t.

$$s^2a + (2t - 1)b \equiv (4 - 4s)a + t^2b$$

Given the identity below, find the value of s and t.

$$ta + t^2b \equiv (s - 3)a + (s + 3)b$$